

Date: Monday, 1/14/2008 2:32:20 PM
 User: Kim Johnston

Process Sheet

Customer	CU-DAR001 Dart Helicopters Services		Drawing Name	BRACKET ASSEMBLY		
Job Number	36727		Part Number	D3121041		
Estimate Number	10703		Drawing Number	D3121 REV E		
P.O. Number	:		Project Number	N/A		
This Issue	1/14/2008	S.O. No. :	Drawing Revision	E		
Prsht Rev.	NC		Material	:		
First Issue	/ /	Type : MACHINED PARTS	Due Date	2/10/2008	Qty:	4 Um: Each
Previous Run	27367					
Written By	:					
Checked & Approved By	:					
Comment	Est Rev: Pick:A 04.02.18 New issue KJ/DS Est Rev:B ECN 1060 07-11-12 DD verified by: EC					

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M174B1000X02000	17-4 SS Bar	
		Comment: Qty.: 0.2840 f(s)/Unit Total : 1.1361 f(s) Material: 17-4 SS Bar per AMS 5604/5643 (M17-4-B1.000x02.000) <i>Jan 08/01/23</i> Identify for D3121-11; Batch: <i>M100843</i>	
2.0	BAND SAW	BAND SAW	
		Comment: BAND SAW Cut blanks: (1.000" x 2.000") 3.250" long	<i>SA 08/01/23</i>
3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1	
		Comment: HAAS CNC VERTICAL MACHINING #1	
		1-Machine D3121-11 as per Folio FA331 and Dwg D3121 Identify as D3121-11	
		2-Deburr	
		3-Scribe batch number	<i>SA 08/01/28</i>
4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE	
		Comment: INSPECT PARTS AS THEY COME OFF MACHINE	<i>08/01/28</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 1/14/2008 2:32:20 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services		Drawing Name: BRACKET ASSEMBLY
Job Number: 36727		Part Number: D3121041
Job Number:		
Seq. #:	Machine Or Operation:	Description :
5.0	QC8	SECOND CHECK
Comment: SECOND CHECK		8F 08/01/28
6.0	D312121	Bolt
Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s) Pick: Qty Part Number Description Batch 1 D3121-21 Bolt 13 36668		SD 08/01/28 (4)
7.0	D3121241	Bearing Assembly
Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s) Pick: Qty Part Number Description Batch 1 D3121-241 Bearing Ass 13 36669		SD 08/01/28 (4)
8.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
Comment: SMALL & MEDIUM FAB RESOURCE 1 Assemble D3121-141 as per Dwg D3121.		SD 08/01/28 (4)
9.0	QC5	INSPECT WORK TO CURRENT STEP
Comment: INSPECT WORK TO CURRENT STEP		S 08/01/28 (4)
10.0	PACKAGING 1	PACKAGING RESOURCE #1
Comment: PACKAGING RESOURCE #1 Identify and Stock Location: 57233		P 08/01/29 (4)
11.0	QC21	FINAL INSPECTION/W/O RELEASE
Comment: FINAL INSPECTION/W/O RELEASE		D 08/01/28 (4)
Job Completion		 U 08/01/30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

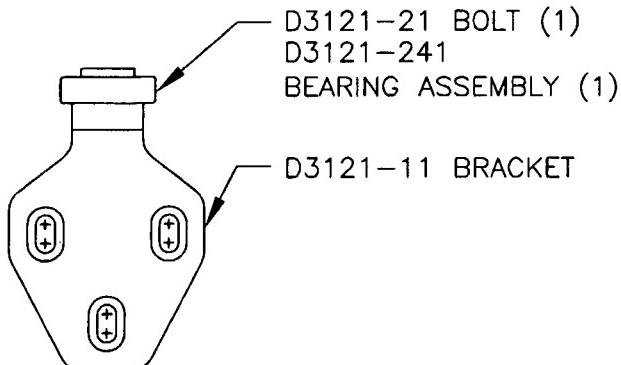
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

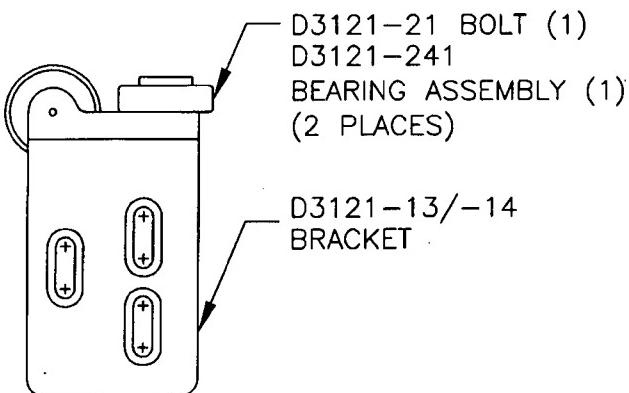
NOTE: Date & initial all entries

DART

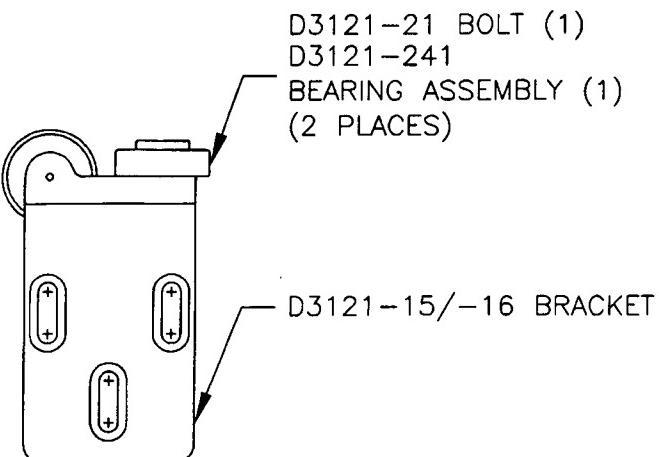
DESIGN <i>A</i>	DRAWN BY <i>CE</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>CH</i>	DRAWING NO. D3121	REV. E SHEET 1 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2
A	02.04.15	NEW ISSUE	
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146	
C	04.02.17	ADD CLEARANCE; USE -241 BEARING	
D	06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000	
E	07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)	

RELEASED
07.11.07 *WD*

D3121-041 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-33)



**D3121-043 (SHOWN) / D3121-044 (OPPOSITE)
BRACKET ASSEMBLY**
(REPLACES PREMIER P/N B30-23000-37/-38)



**D3121-045 (SHOWN) / D3121-046 (OPPOSITE)
BRACKET ASSEMBLY**
(REPLACES PREMIER P/N B30-23000-35/-36)

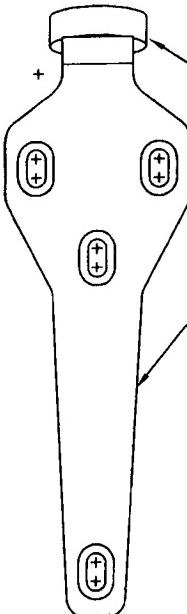
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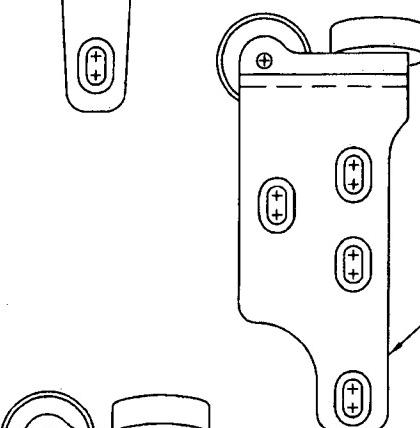
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CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3121	REV. E SHEET 2 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2



D3121-21 BOLT (1)
D3121-241
BEARING ASSEMBLY (1)

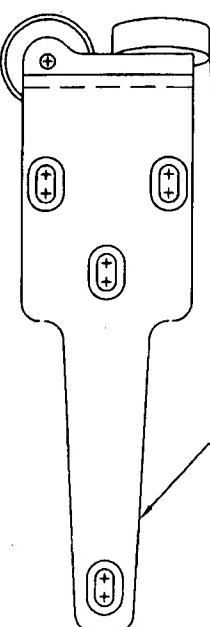
D3121-141 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23001-01)



D3121-21 BOLT (1)
D3121-241 BEARING ASSEMBLY (1)
(2 PLACES)

D3121-113/-114 BRACKET

RELEASED
07.11.07 *W*



D3121-21 BOLT (1)
D3121-241 BEARING ASSEMBLY (1)
(2 PLACES)

**D3121-145 (SHOWN) / D3121-146 (OPPOSITE)
BRACKET ASSEMBLY**

(REPLACES PREMIER P/N B30-23000-03/-04)

SHOP PT-05/-06

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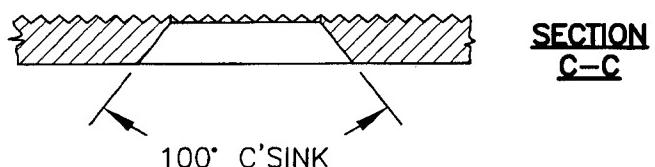
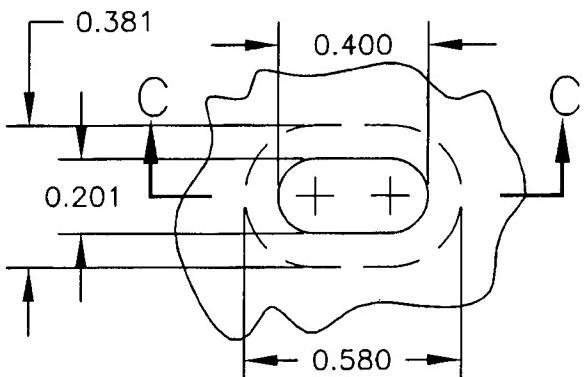
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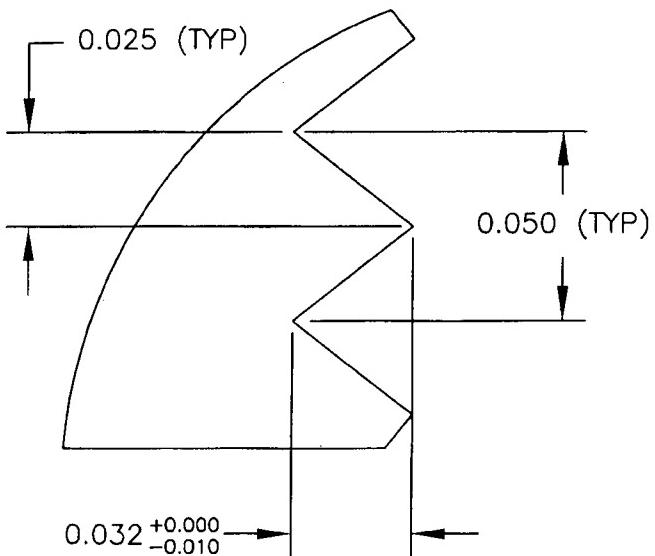
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DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

DETAIL A:
SLOT DETAIL
SCALE 2:1
VIEW ROTATED



DETAIL B:
RIDGE DETAIL
PARTIAL SECTION
SCALE 1:20



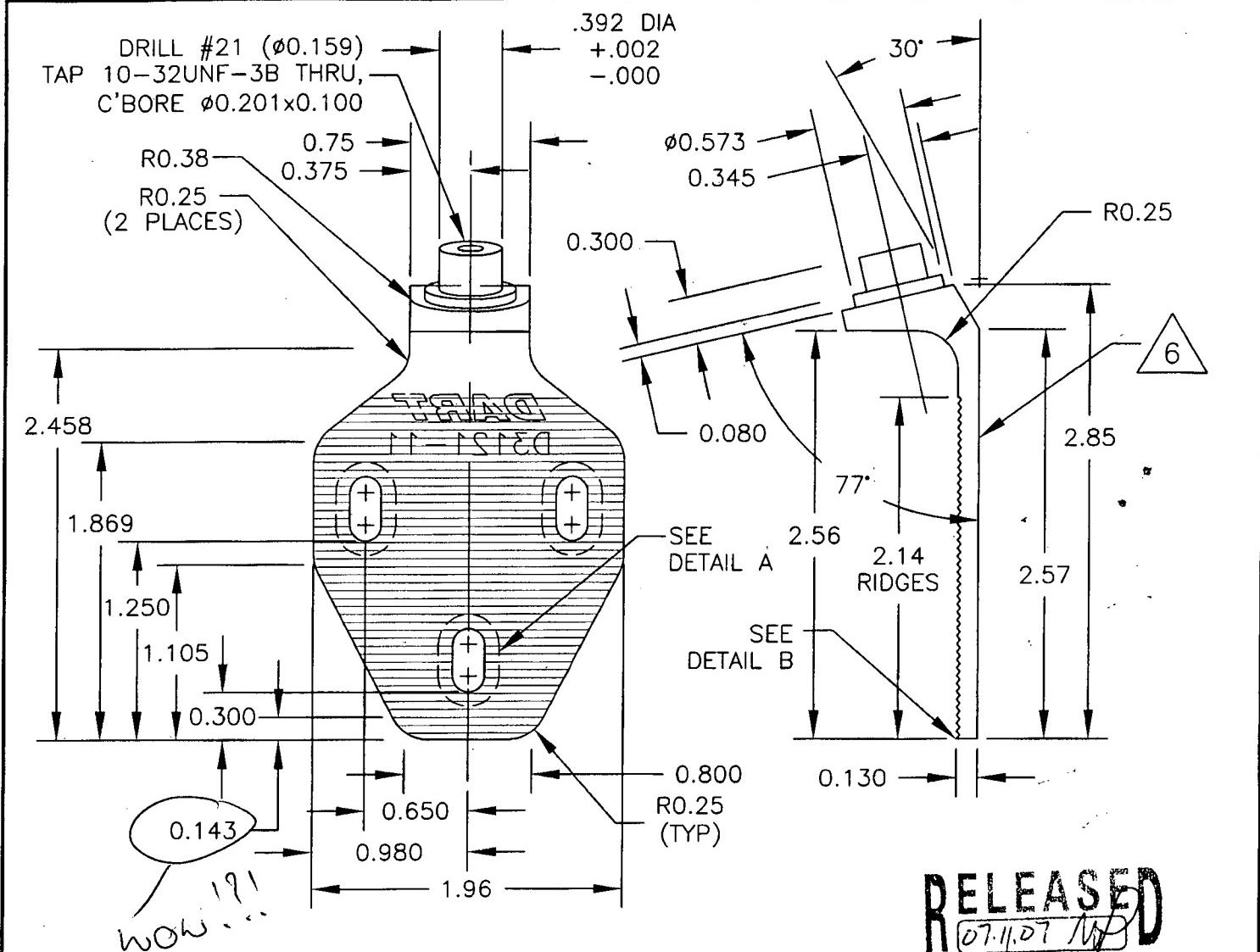
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DATE 07.11.07	TITLE BRACKET ASSEMBLY		SCALE 1:1	



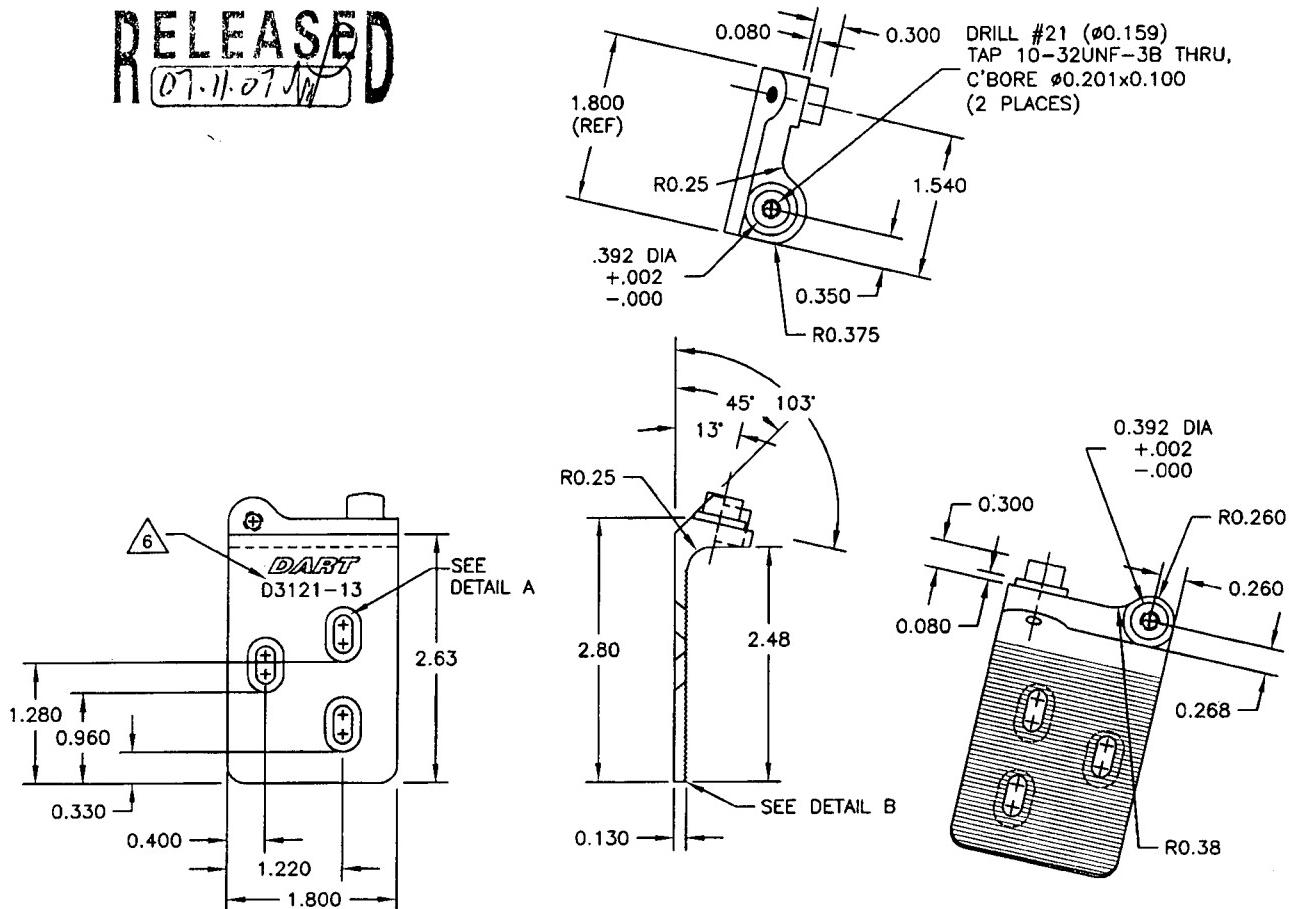
D3121-11 BRACKET

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
 - 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 3) ALL DIMENSIONS ARE IN INCHES
 - 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
 - 5) ENGRAVE DART P/N & LOGO AS SHOWN
 - 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07 J.W.

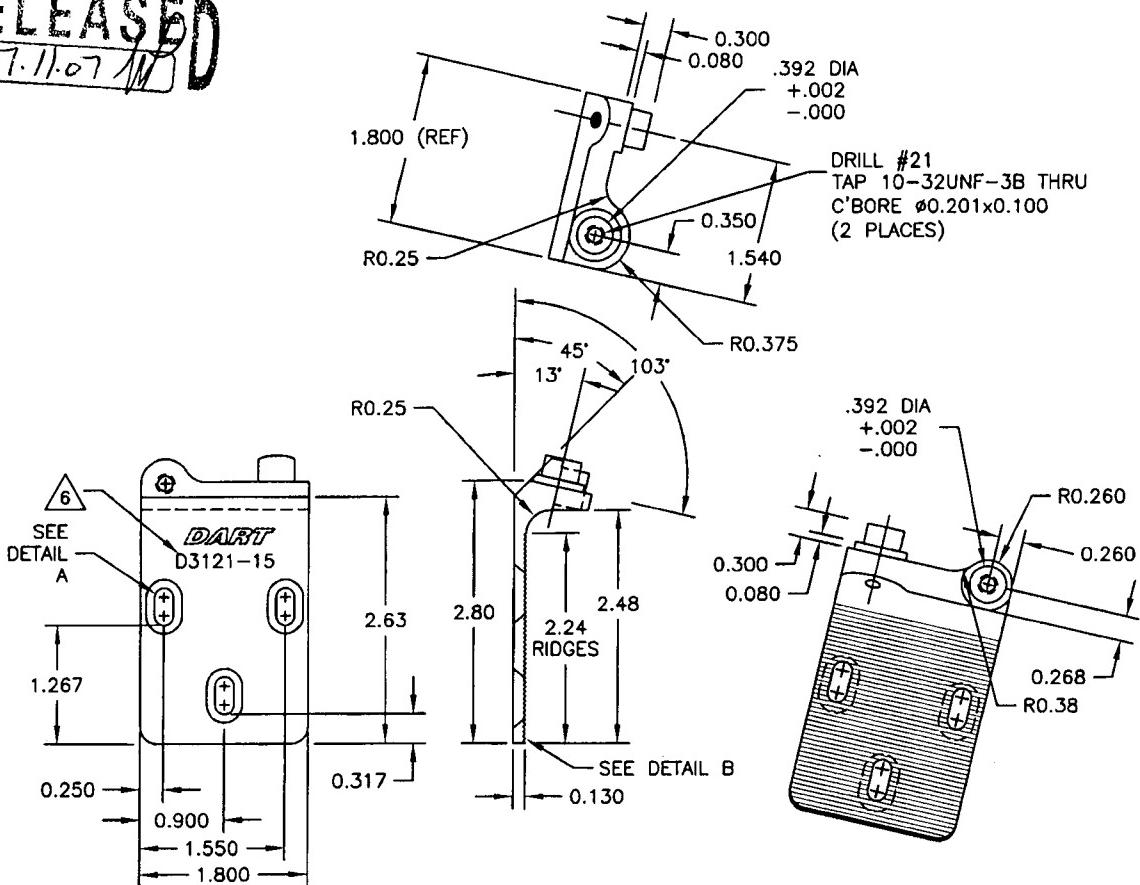
D3121-13 BRACKET (SHOWN)
D3121-14 BRACKET (OPPOSITE)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
 MIN ULTIMATE TENSILE STRENGTH = 150 ksi
 MIN YIELD TENSILE STRENGTH = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3121
DATE 07.11.07	TITLE BRACKET ASSEMBLY	REV. E SHEET 6 OF 10 SCALE 1:2

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07.11.07

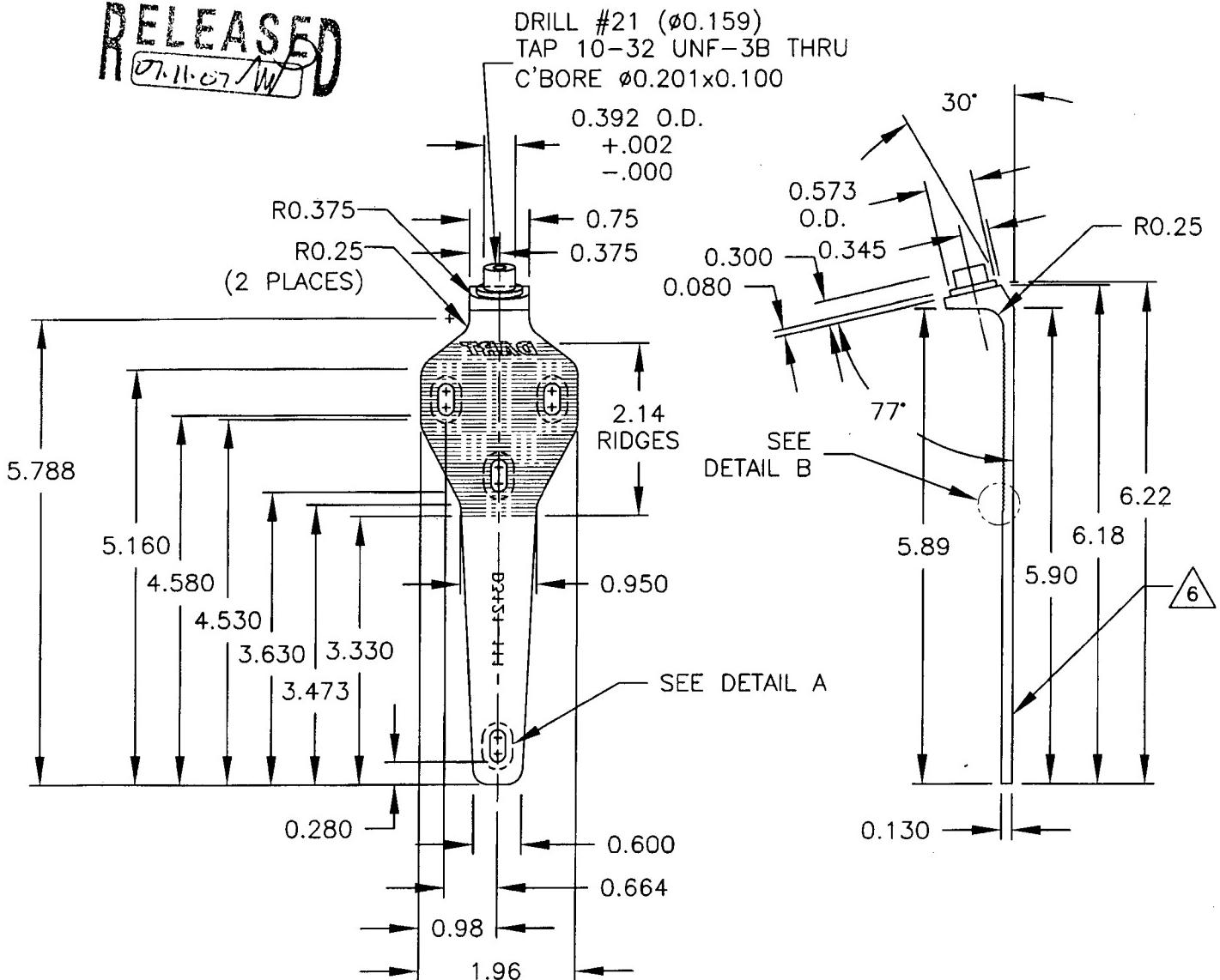
**D3121-15 BRACKET (SHOWN)
D3121-16 BRACKET (OPPOSITE)**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N AND LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DATE		REV. E
07.11.07		SHEET 7 OF 10

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07.11.07/W**D3121-111 BRACKET**

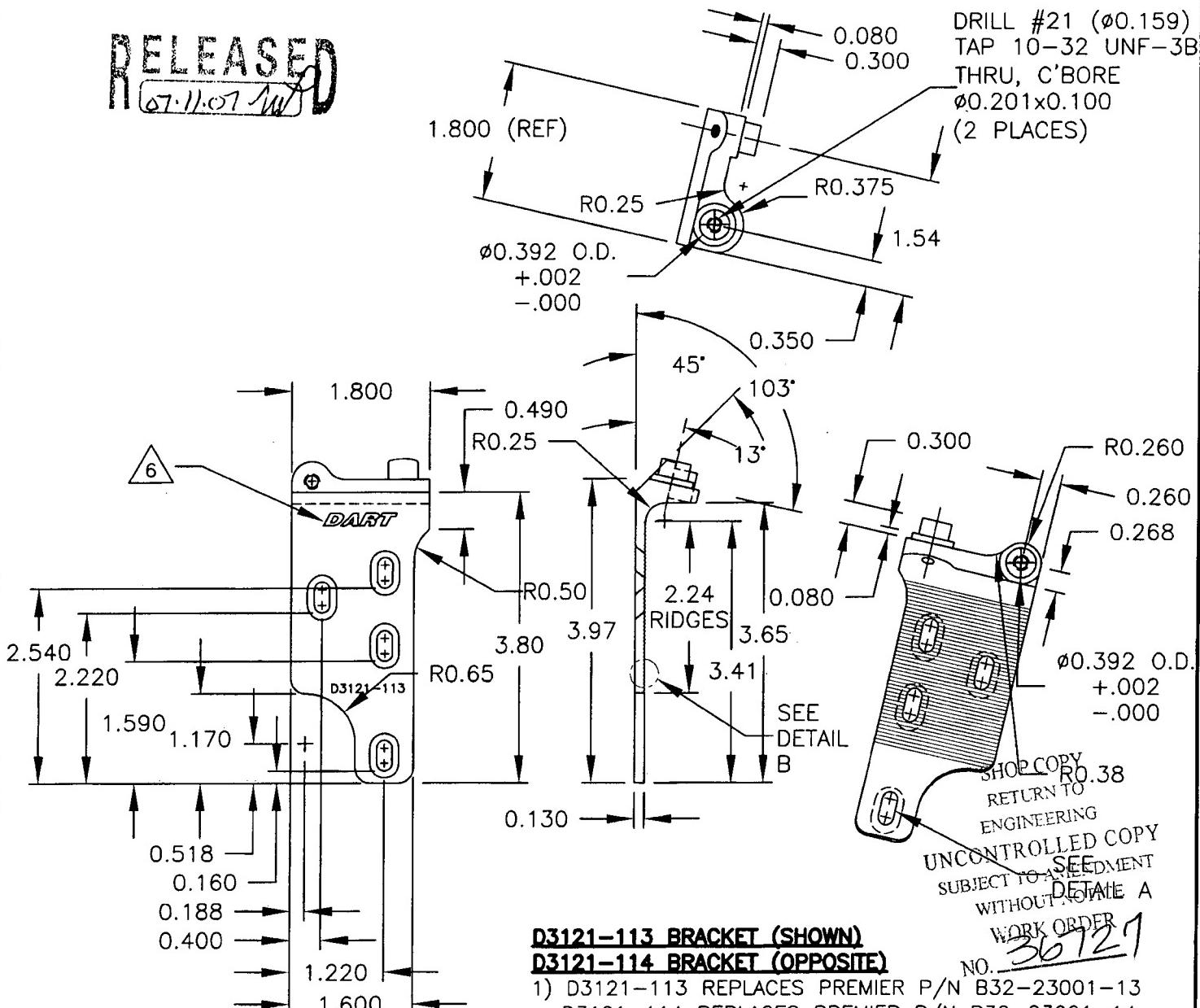
- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
 - MIN ULTIMATE TENSILE = 150 ksi
 - MIN YIELD TENSILE = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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WORK ORDER
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CHECKED 	APPROVED 	DRAWING NO. D3121	REV. E SHEET 8 OF 10	
DATE 07.11.07	TITLE BRACKET ASSEMBLY		SCALE 1:2	

A rectangular stamp with a double-line border. The word "RELEASED" is printed in large, bold, capital letters across the top. Below it, the date "07-11-07" is printed in a smaller font, followed by a line for a signature or initials.



D3121-113 BRACKET (SHOWN)
D3121-114 BRACKET (OPPOSITE)

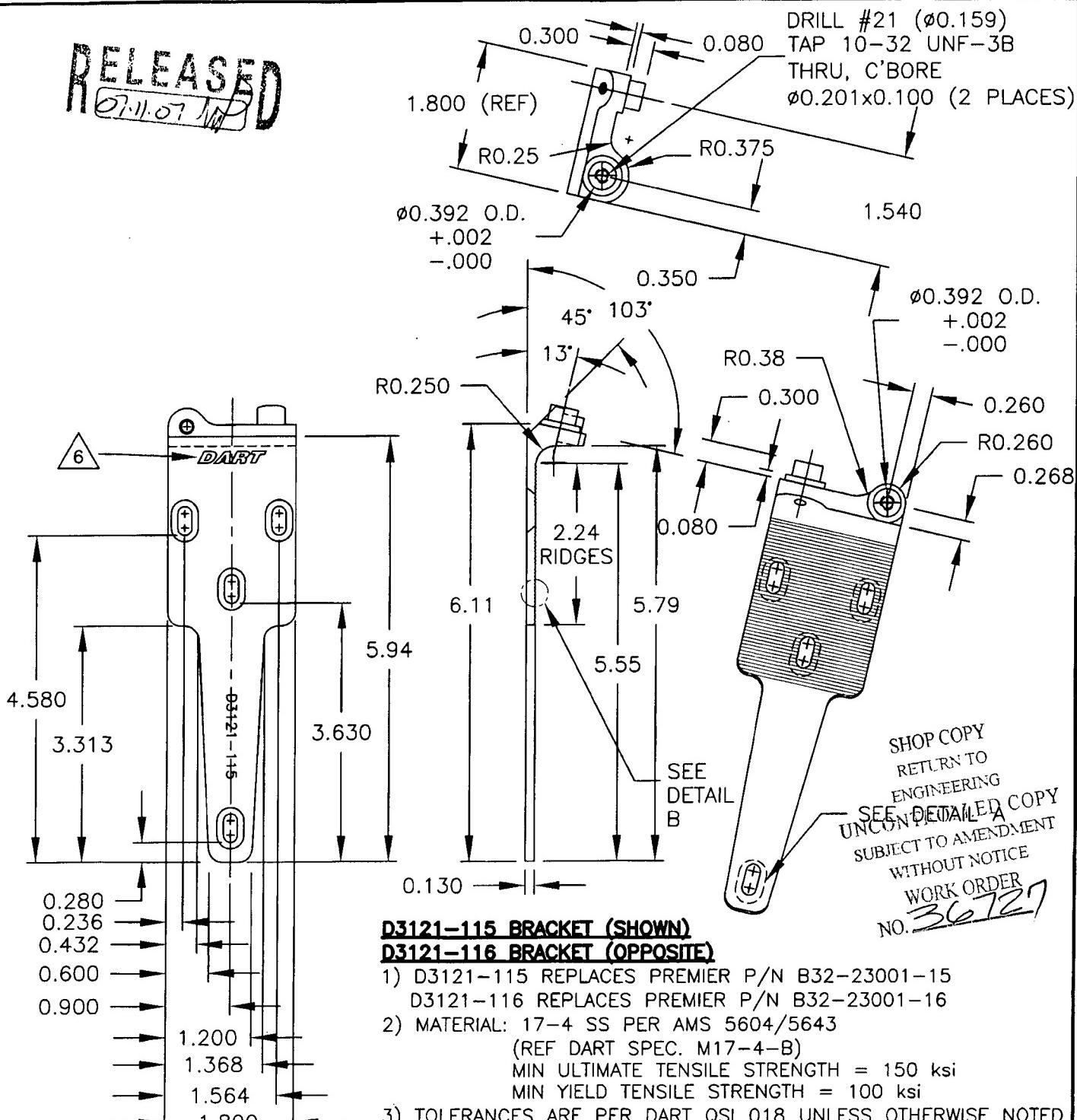
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~~WITHOUT NOTICE A~~
WORK ORDER
NO. 30121

- 1) D3121-113 REPLACES PREMIER P/N B32-23001-13
 - 2) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi
MIN YIELD TENSILE STRENGTH = 100 ksi
 - 3) TOLERANCES ARE PER DART QSI 018 UNLESS
OTHERWISE NOTED
 - 4) ALL DIMENSIONS ARE IN INCHES
 - 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
 - 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
 - 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005



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CHECKED #	APPROVED, #	DRAWING NO. D3121	REV. E	SHEET 9 OF 10
DATE 07.11.07	TITLE BRACKET ASSEMBLY		SCALE 1:2	

RELEASED
07.11.07 M



- D3121-116 BRACKET (UPPER)**

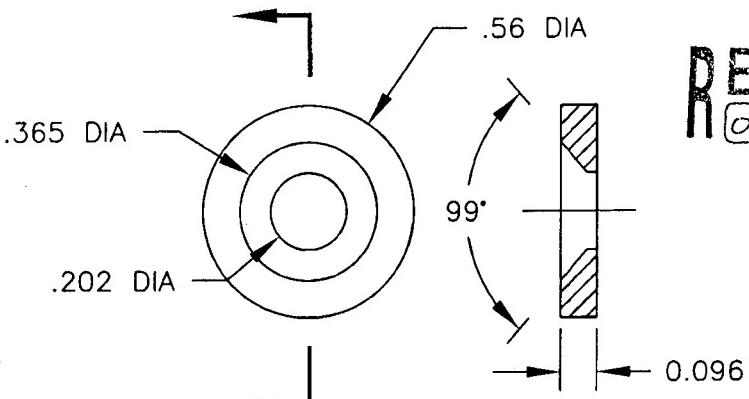
 - 1) D3121-115 REPLACES PREMIER P/N B32-23001-15
D3121-116 REPLACES PREMIER P/N B32-23001-16
 - 2) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi
MIN YIELD TENSILE STRENGTH = 100 ksi
 - 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) ALL DIMENSIONS ARE IN INCHES
 - 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
 - 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
 - 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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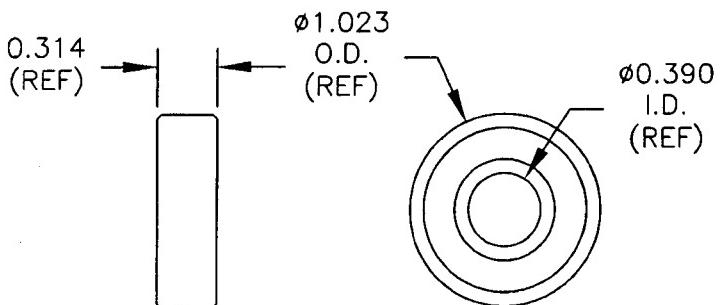
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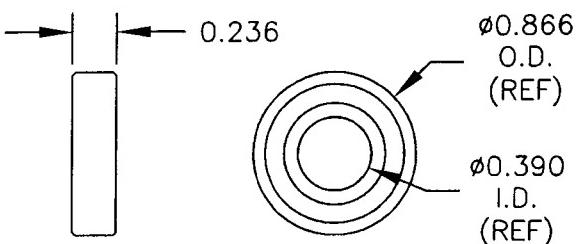
DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3121	REV. E SHEET 10 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

**D3121-17 WASHER (SCALE 2:1)**

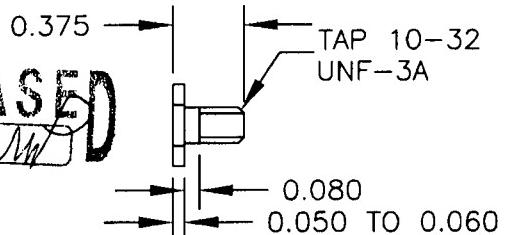
- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-19 BEARING (SCALE 1:1)**

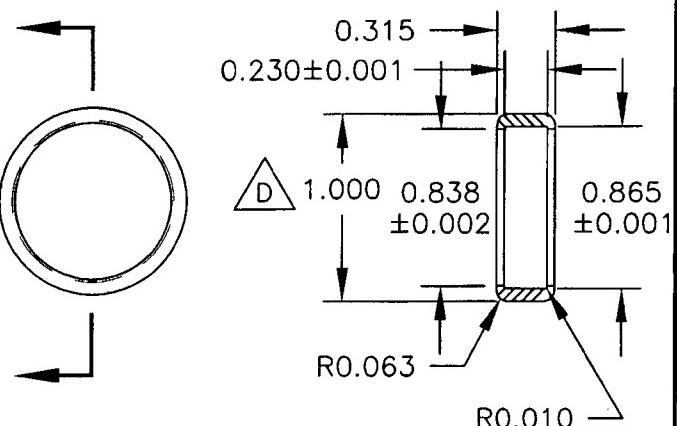
- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM
FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-23 BEARING (SCALE 1:1)**

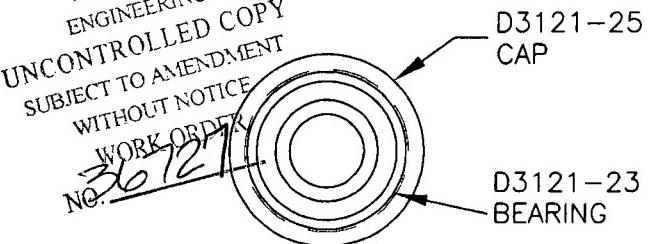
- 1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z
OR KML P/N 6900-ZZ
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-21 BOLT (SCALE 1:1)**

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-25 CAP (SCALE 1:1)**

- 1) MATERIAL: DELRIN ROD, Ø1.25 (REF DART SPEC. M-DELRIN-R1.250)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

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No. 36721**D3121-241 BEARING ASSEMBLY (SCALE 1:1)**

DART AEROSPACE LTD	Work Order:	36727
Description: T3 bracket Assembly	Part Number:	103121-11
Inspection Dwg:	Rev:	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø .392	+ .002 - .000	.392	/			
Ø .201 x .100	+ .010	.200 x .100	/			
.75	+ .030	.756	/			
.375	+ .010	.375	/			
1.250	+ .010	1.240	/			
.300	+ .010	.290	/			
1.96	+ .030	1.964	/			
Ø .573	+ .001	Ø .574	/			
.345	+ .010	.345	/			
.300	+ .010	.308	/			
.080	+ .010	.076	/			
2.56	+ .030	2.572	/			
2.14	+ .030	2.120	/			
.130	+ .010	.128	/			
2.57	+ .030	2.596	/			
2.85	+ .030	2.853	/			
.381	+ .010	.380	/			
.400	+ .010	.395	/			
.201	+ .010	.203	/			
.580	+ .010	.580	/			
.032	+ .000 - .010	.032	/			

Measured by:	SJ	Audited by:	SF	Prototype Approval:	
Date:	08/01/28	Date:	08/01/28	Date:	

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/RF	

